

## Author Index

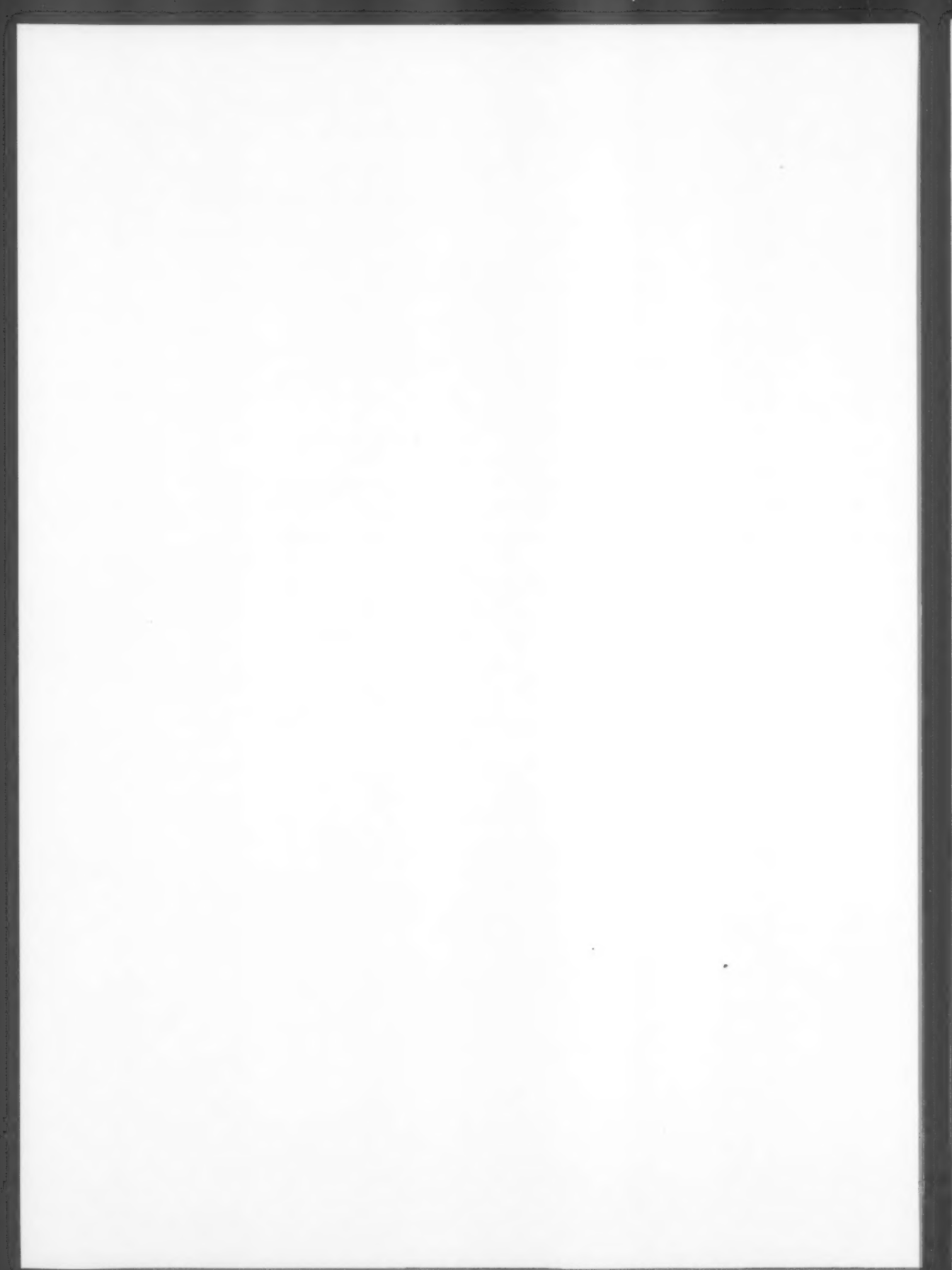
- Abe V., see Phelps R. P., 293.  
 Ahmed Z. F., see Wahab M. A., 619.  
 Al-Dosari M., see Belal I. E. H., 855.  
 Al-Qwaifeir A., see Belal I. E. H., 855.  
 Albrektsen S., Sandnes K., Glette J. & Waagbø R.: Influence of dietary vitamin B<sub>6</sub> on tissue vitamin B<sub>6</sub> contents and immunity in Atlantic salmon, *Salmo salar* L., 331.  
 Alexis M. N., see Nengas I., 185.  
 Alkon A., see Milstein A., 55.  
 Aminul Islam M., see Wahab M. A., 619.  
 Anderson T., see Anderson T., 117.  
 Anderson T., Anderson T., De Silva S. S., Collins R. O., Chavez J. R., Jones P. L. & Austin C. M.: A conceptual production model for freshwater crayfish pond culture incorporating detrital forage, 117.  
 Argue B. J., see El-Dahhar A. A., 451.  
 Argue B. J., see Phelps R. P., 293.  
 Arizpe C. O.: Mortality, growth and somatic secondary production of the bivalve, *Pinna rugosa* (Sowerby), in suspended and bottom culture in Bahía de La Paz, Mexico, 843.  
 Arnesen A. M., Lysfjord G. & Darnsgård B.: Smolt characteristics of small first-time migrant and resident Arctic charr, *Salvelinus alpinus* (L.), from a river system in northern Norway, 809.  
 Åsgård T., see Einen O., 701.  
 Assem H., see Belal I. E. H., 141.  
 Audet C., see Dumas S., 759.  
 Austin C. M., see Anderson T., 117.  
 Avnimelech Y., see Milstein A., 55.  
 Balogun A. M. & Fagbenro O. A.: Use of macadamia presscake as a protein feedstuff in practical diets for tilapia, *Oreochromis niloticus* (L.), 371.  
 Banzoussi B., see de Graaf G. J., 233.  
 Barriónuevo W. R. & Fernandes M. N.: Critical thermal maxima and minima for curimatá, *Prochilodus scrofa* Steindachner, of two different sizes, 447.  
 Barton B. A., see Iwama G. K., 273.  
 Baynes S. M., see Howell B. R., 135.  
 Beard T. W., see Wickins J. E., 379.  
 Beardmore J. A., see Sorgeloos P., 147.  
 Belal I. E. H. & Assem H.: Substitution of soybean meal and oil for fish meal in practical diets fed to channel catfish, *Ictalurus punctatus* (Rafinesque): effects on body composition, 141.  
 Belal I. E. H., Al-Qwaifeir A. & Al-Dosari M.: Replacing fish meal with chicken offal silage in commercial *Oreochromis niloticus* (L.) feed, 855.  
 Bell T. A.: New animal drug approvals and the United States aquaculture industry: a partnership for growth, 679.  
 Ben-Dom N., see Cherfas N., 289.  
 Beveridge M. C. M., see Duis K., 549; see also Ross L. G., 539.  
 Bianchini M. L., see Zoccarato I., 361.  
 Bjørn P. A., see Finstad B., 791.  
 Blanc J. M., see Dumas S., 759.  
 Boon J. H., see Hariati A. M., 819.  
 Boujard T., Gelineau A. & Corraze G.: Time of a single daily meal influences growth performance in rainbow trout, *Oncorhynchus mykiss* (Walbaum), 341.  
 Brady D., see Knauer J., 283.  
 Bright Singh I. S. & Philip R.: A simple device for the separation of weak larvae of *Macrobrachium rosenbergii* (De Man), 225.  
 Bureau D. P., de la Noüe J. & Jaruratjamom P.: Effect of dietary incorporation of crop residues on growth, mortality and feed conversion ratio of the African catfish, *Clarias gariepinus* (Burchell), 351.  
 Buttle L. G., Uglow R. E. & Cowx I. G.: The effect of diet and photoperiod on ammonia efflux rates of the African catfish, *Clarias gariepinus* (Burchell, 1822), 895.  
 Charles A. T., see Chen H., 81.  
 Chartois H., see Dosdat A., 639.  
 Chavez J. R., see Anderson T., 117.  
 Chen H., Hu B. & Charles A. T.: Chinese integrated fish farming: a comparative bioeconomic analysis, 81.  
 Chen T. W., see Guo F. C., 265, 887.  
 Cherfas N., Gomelsky B., Ben-Dom N. & Hulata G.: Evidence for the heritable nature of spontaneous diploidization in common carp, *Cyprinus carpio* L., eggs, 289.  
 Child A. R., see Wickins J. E., 379.  
 Christiansen R., Struksnaes G., Estermann R. & Torrisen O. J.: Assessment of flesh colour in Atlantic salmon, *Salmo salar* L., 311.  
 Clark D., see Marsden M. W., 527.  
 Collins R. O., see Anderson T., 117.  
 Contreras Salazar G., see Phelps R. P., 293.  
 Cook P. A., see Harris S. A., 323.  
 Corraze G., see Boujard T., 341.  
 Costello M. J., see Massik Z., 607.  
 Cowx I. G., see Buttle L. G., 895.  
 Crandell P. A., see Smoker W. W., 213.  
 Crozier W. W., see Moffet I. J. J., 67.  
 Cruz E. M. & Ridha M. T.: Survival rates of tilapia, *Oreochromis spilurus* (Günther), fingerlings reared at high densities during winter using warm underground sea water, 307.  
 Culver D. A., see Qin J., 911.  
 Curtis T. A., see Secor D. H., 155.  
 Darnsgård B., see Arnesen A. M., 809.  
 Darmi M., see Maluwa A. O., 103; see also Riley J., 95.  
 Davies S. J., see Nengas I., 185.  
 Davis M. W., see Olla B. L., 393.  
 de Graaf G. J., Galemoni F. & Banzoussi B.: Artificial

- reproduction and fingerling reproduction of the African catfish, *Clarias gariepinus* (Burchell 1822), in protected and unprotected ponds, 233.
- de la Noüe J., see Bureau D. P., 351. see also Dumas S., 759.
- De Silva S. S., see Anderson T., 117. see also Nandeesha M. C., 161.
- Dean J. M., see Secor D. H., 155.
- Degani G., see Kushnirov D., 409.
- Desbruyeres E., see Dosdat A., 639.
- Dosdat A., Metailler R., Tetu N., Servais E., Chartois H., Huelvan C. & Desbruyeres E.: Nitrogenous excretion in juvenile trout, *Scophthalmus maximus* (L.), under controlled conditions, 639.
- Doughty C. R. & McPhail C. D.: Monitoring the environmental impacts and consent compliance of freshwater fish farms, 557.
- Drinan E. M., see Murphy T. M., 861.
- Duis K., Inglis V., Beveridge M. C. M. & Hammer C.: Leaching of four different antibacterials from oil- and alginate-coated fish feed pellets, 549.
- Dumas S., Blanc J. M., Audet C. & de la Noüe J.: Variation in yolk absorption and early growth of brook charr, *Salvelinus fontinalis* (Mitchill), Arctic charr, *Salvelinus alpinus* (L.), and their hybrids, 759.
- Duncan J. R., see Knauer J., 283.
- Edwards D. B., see Spenser B. E., 249.
- Eikebrokk B., Piedrahita R. & Ulgenes Y.: Rates of fish waste production and effluent discharge from a recirculating system (biofish) under commercial conditions, 589.
- Einen O., Holmefjord I., Åsgård T. & Talbot C.: Auditing nutrient discharges from fish farms: theoretical and practical considerations, 701.
- El-Dahhar A. A. & Argue B. J.: Effect of protein to energy ratio in purified diets on growth performance, feed utilization and body composition of Mozambique tilapia, *Oreochromis mossambicus* (Peters), 451.
- Espada A. T., see Siar S. V., 459.
- Estermann R., see Christiansen R., 311.
- Fagbenro O. A., see Balogun A. M., 371.
- Ferreiro Castejón A., see Ferreiro Almeda S., 859.
- Fernandes M. N., see Barrionuevo W. R., 447.
- Ferreiro Almeda S., Garcia Garcia R., Feberero Castejón A. & López Ruiz J. L.: Effects of a zeolitic product (Zestec-56) on ammonium production in a rainbow trout, *Oncorhynchus mykiss* (Walbaum), fry culture, 859.
- Finstad B., Bjørn P. A. & Nilsen S. T.: Survival of salmon lice, *Lepeoptherius salmonis* Krøyer, on Arctic charr, *Salvelinus alpinus* (L.), in fresh water, 791.
- Flajšhans M., see Linhart O., 367.
- Fortina R., see Zoccarato I., 361.
- Fozzard I. R., see Marsden M. W., 527.
- Galemoni E., see de Graaf G. J., 233.
- Gannon F., see Murphy T. M., 861.
- Garcia Garcia R., see Ferreiro Almeda S., 859.
- Gasco L., see Zoccarato I., 361.
- Gavine F. M., Ridha M. T. & Murray A.: Influence of improved feed quality and food conversion ratios on phosphorus loadings from cage culture of rainbow trout, *Oncorhynchus mykiss* (Walbaum), in freshwater lakes, 483.
- Gelineau A., see Boujard T., 341.
- Gjedrem J. & Gjoen H. M.: Genetic variation in susceptibility of Atlantic salmon, *Salmo salar* L., to furunculosis, BKD and cold water vibriosis, 129.
- Gjoen H. M., see Gjedrem J., 129.
- Glette J., see Albrektsen S., 331.
- Gomelsky B., see Cherfas N., 289.
- Goodgame-Tiu L. S., see Webster C. D., 299.
- Guo F. C., Teo L. H. & Chen T. W.: Effects of anaesthetics on the oxygen consumption rates of platyfish, *Xiphophorus maculatus* (Günther), 887.
- Guo F.-C., Teo L. H. & Chen T.-W.: Effects of anaesthetics on the water parameters in a simulated transport experiment of platyfish, *Xiphophorus maculatus* (Günther), 265.
- Hammer C., see Duis K., 549.
- Hamre K. & Lie O.: Minimum feeding requirement of vitamin E for Atlantic salmon, *Salmo salar* L., at first feeding, 175.
- Hanson T., see Hatch U., 687.
- Haq M. S., see Wahab M. A., 619.
- Hariati A. M., Wiadnya D. G. R., Prajitno A., Sukkel M., Boon J. H. & Verdegem M. C. J.: Recent developments of shrimp, *Penaeus monodon* (Fabricus) and *Penaeus merguensis* (de Man), culture in East Java, 819.
- Harpaz S., see Hulata G., 765.
- Harris S. A. & Cook P. A.: Growth and feeding of white steenbras, *Lithognathus lithognathus* (Cuvier) (Sparidae), under experimental culture conditions, 323.
- Hatch U. & Hanson T.: The economic impact of feeding restrictions on US catfish, *Ictalurus punctatus* (Rafinesque), aquaculture operations, 687.
- Hecht T., see Knauer J., 283.
- Hemre G.-I., Mangor-Jensen A., Rosenlund G., Waagbø R. & Lie E.: Effect of dietary carbohydrates on gonadal development in broodstock cod, *Gadus morhua* L., 399.
- Hemre G.-I., Sandnes K., Lie O., Torrissen O. & Waagbø R.: Carbohydrate nutrition in Atlantic salmon, *Salmo salar* L.: growth and feed utilization, 149.
- Henderson A. R. & Ross D. J.: Use of macrobenthic infaunal communities in the monitoring and control of the impact of marine cage fish farming, 659.
- Holmefjord I., see Einen O., 701.
- Howell B. R., Baynes S. M. & Thompson D.: Progress towards the identification of the sex-determining mechanism of the sole, *Solea solea* (L.), by the induction of diploid gynogenesis, 135.
- Hu B., see Chen H., 81.
- Huelvan C., see Dosdat A., 639.
- Huisman E. A., see Middendorp A. J., 731.
- Hulata G., see Cherfas N., 289.
- Hulata G., Karplus I. & Harpaz S.: Evaluation of some red tilapia strains for aquaculture: growth and colour segregation in hybrid progeny, 765.
- Hulata G., see Cherfas N., 289.
- Hussain M. G., McAndrew B. J. & Penman D. J.: Phenotypic variation in meiotic and mitotic gynogenetic diploids of the Nile tilapia, *Oreochromis niloticus* (L.), 205.
- Inglis V., see Duis K., 549.
- Iwama G. K., Morgan J. D. & Barton B. A.: Simple field

- methods for monitoring stress and general condition of fish, 273.
- Jaruratjamom P., see Bureau D. P., 351.
- Jauncey K., see Sadiku S. O. E., 651.
- Jones P. L., see Anderson T., 117.
- Kappelman-Pina E., see Monteforte M., 497.
- Karplus I., see Hulata G., 765; see also Milstein A., 55.
- Kelly L. A.: Predicting the effect of cages on nutrient status of Scottish freshwater lochs using mass-balance models, 469.
- Ketola H. G., see Luzier J. M., 577.
- Knauer J., Brady D., Duncan J. R. & Hecht T.: Amino acid, fatty acid and mineral element profile of juvenile South African abalone, *Haliotis midae* L., 283.
- Kochba M., see Milstein A., 55.
- Krishna Murthy D., see Nandeesh M. C., 161.
- Krogdahl Å., see Olli J. J., 161, 831; see also Uglem I., 837.
- Kumai H., see Takii K., 243.
- Kushnirov D. & Degani G.: Sexual dimorphism in yellow European eels, *Anguilla anguilla* (L.), 409.
- Lahnsteiner E., Weismann T. & Patzner R. A.: A uniform method for cryopreservation of semen of the salmonid fishes *Oncorhynchus mykiss* (Walbaum), *Salmo trutta* f. *fario* L., *Salmo trutta* f. *lacustris* L., sp., 801.
- Landfald B., see Liltved H., 567.
- Leveroni Calvi S., see Zoccarato L., 361.
- Lie Ø., see Hamre K., 175, see also Hemre G.-I., 149, 399; see also Moksness E., 109.
- Liltved H. & Landfald B.: Use of alternative disinfectants, individually and in combination, in aquacultural wastewater treatment, 567.
- Linhart O. & Flajšhans M.: Triploidization of European catfish, *Silurus glanis* L., by heat shock, 367.
- Little D. C., see Nuov S., 601.
- Lone K. P., see Ridha M. T., 479.
- López Ruiz J. L., see Ferreiro Almeda S., 859.
- Lopez-Espinosa B., see Monteforte M., 497.
- Luzier J. M., Summerfelt R. C. & Ketola H. G.: Partial replacement of fish meal with spray-dried blood powder to reduce phosphorus concentrations in diets for juvenile trout, *Oncorhynchus mykiss* (Walbaum), 577.
- Lysfjord G., see Arnesen A. M., 809.
- McAndrew B. J., see Hussain M. G., 205; see also Myers J. M., 229.
- Machiels M. A. M., see van der Meer M. B., 901.
- McLean N., see Marsden M. W., 527.
- McPhail C. D., see Doughty C. R., 557.
- Maluwa A. O., Darmi M. & Rashidi B. B.: Production of the Malawi chambo, *Oreochromis karongae* (Trewavas, 1941) association, and *Oreochromis shiranus* (Boulenger, 1896) in polyculture with the African catfish, *Clarias gariepinus* (Burchell, 1822), 103.
- Mamcarz A.: Changes in zooplankton structure around illuminated cage culture, 515.
- Mangor-Jensen A., see Hemre G.-I., 399.
- Marsden M. W., Fozzard I. R., Clark D., McLean N. & Smith M. R.: Control of phosphorous inputs to a freshwater lake: a case study, 527.
- Massik Z. & Costello M. J.: Bioavailability of phosphorous in fish farm effluents to freshwater phytoplankton, 607.
- Matsuoka M., see Smoker W. W., 213.
- Metailler R., see Dosdat A., 639.
- Middendorp A. J.: Pond farming of Nile tilapia, *Oreochromis niloticus* (L.), in northern Cameroon. Feeding combinations of cottonseed cake and brewery waste in fingerling culture, hand-sexed monosex culture, and mixed culture with police-fish, *Clarias gariepinus* (Burchell), 715.
- Middendorp A. J.: Pond farming of Nile tilapia, *Oreochromis niloticus* (L.), in northern Cameroon. Mixed culture of large tilapia (> 200 g) with cattle manure and cottonseed cake as pond inputs, and African catfish, *Clarias gariepinus* (Burchell), as police-fish, 723.
- Middendorp A. J.: Pond farming of Nile tilapia, *Oreochromis niloticus* (L.), in northern Cameroon. Controlling a sexing error of 1% in hand-sexed male tilapia monosex culture by African catfish, *Clarias gariepinus* (Burchell), 739.
- Middendorp A. J.: Pond farming of Nile tilapia, *Oreochromis niloticus* (L.), in northern Cameroon. Adding hand-sexed male tilapia to graze the dense algal blooms in ponds with African catfish, *Clarias gariepinus* (Burchell), 749.
- Middendorp A. J. & Huisman E. A.: Pond farming of Nile tilapia, *Oreochromis niloticus* (L.), in northern Cameroon. Comparing two different strategies for feeding cottonseed cake in tilapia male monosex culture, 731.
- Milstein A., Alkon A., Karplus I., Kochba M. & Avnimelech Y.: Combined effects of fertilization rate, manuring and feed pellet application on performance and water quality in polyculture ponds, 55.
- Moffet I. J. & Crozier W. W.: An investigation into the reproducibility of triploid brown trout, *Salmo trutta* L., production using heat shock, 67.
- Moksness E., Rosenlund G. & Lie Ø.: Effect of fish meal quality on growth of juvenile wolffish, *Anarhichas lupus* L., 109.
- Monteforte M., Kappelman-Pina E. & Lopez-Espinosa B.: Spatfall of pearl oyster, *Pteria sterna* (Gould), on experimental collectors at Bahía de la Paz, South Baja California, Mexico, 497.
- Moore W., see Morrissy N. M., 71.
- Morgan J. D., see Iwama G. K., 273.
- Morrissy N. M., Walker P. & Moore W.: Predictive equations for managing semi-intensive grow-out of a freshwater crayfish (marron), *Cherax tenuimanus* (Smith 1912) (Decapoda: Parastacidae), on a commercial farm, 71.
- Murphy T. M., Drinan E. M. & Gannon E.: Studies with an experimental model for pancreas disease in Atlantic salmon, *Salmo salar* L., 861.
- Murray A., see Gavine F. M., 483.
- Myers J. M., Powell S. F. & McAndrew B. J.: Induction of tetraploidy in brown trout, *Salmo trutta* L., using hydrostatic pressure, 229.
- Nakamura M., see Takii K., 243.
- Nandeesh M. C., De Silva S. S. & Krishna Murthy D.: Use of mixed feeding schedules in fish culture: performance of common carp, *Cyprinus carpio* L., on plant and animal protein based diets, 161.
- Nengas I., Alexis M. N., Davies S. J. & Petichakis G.: Investigation to determine digestibility coefficients of

- various raw materials in diets for gilthead sea bream, *Sparus auratus* L., 185.
- New N. B.: Status of freshwater prawn farming: a review. 1.
- Nilsen S. T., see Finstad B., 791.
- Nuov S., Little D. C. & Yakupitiyage A.: Nutrient flows in an integrated pig, maggot and fish production system, 601.
- Obiekezie A. & Okafor N.: Toxicity of four commonly used chemotherapeutic compounds to fry of the African catfish, *Clarias gariepinus* (Burchell), 441.
- Okafor N., see Obiekezie A., 441.
- Okwuossa V. N. & Omoregie E.: Acute toxicity of alkylbenzene sulphonate (ABS) detergent to the toothed carp, *Aphyosemion gairdneri* (L.), 755.
- Olla B. L., Davis M. W. & Schreck C. B.: Stress-induced impairment of predator evasion and non-predator mortality in Pacific salmon, 393.
- Olli J. J. & Krogdahl Å.: Alcohol soluble components of soybeans seem to reduce fat digestibility in fish-meal-based diets for Atlantic salmon, *Salmo salar* L., 831.
- Olli J. J., Krogdahl Å. & Våbenø A.: Dehulled solvent-extracted soybean meal as a protein source in diets for Atlantic salmon, *Salmo salar* L., 167.
- Omoriegie E., see Okwuossa V. N., 755.
- Patzner R. A., see Lahnsteiner F., 801.
- Pauly D., see van Dam A. A., 415.
- Pavlov D. A.: Growth of juveniles of White Sea common wolffish, *Anarhicas lupus* L., in captivity, 195.
- Penman D. J., see Hussain M. G., 205.
- Penning De Vries F. W. T., see van Dam A. A., 415.
- Petichakis G., see Nengas I., 185.
- Phelps R. P., Contreras Salazar G., Abe V. & Argue B. J.: Sex reversal and nursery growth of Nile tilapia, *Oreochromis niloticus* (L.), free-swimming in earthen ponds, 293.
- Philip R., see Bright Singh I. S., 225.
- Piedrahita R., see Elkebrokk B., 589.
- Pilarczyk A., see Wiegerjes G. F., 797.
- Powell S. F., see Myers J. M., 229.
- Prajitno A., see Hariati A. M., 819.
- Qin J., Culver D. A. & Yu N.: Effect of organic fertilizer on heterotrophs and autotrophs: implications for water quality management, 911.
- Rahmatullah S. M., see Wahab M. A., 619.
- Rashidi B. B., see Maluwa A. O., 103.
- Redshaw C. J.: Ecotoxicological risk assessment of chemicals used in aquaculture: a regulatory viewpoint, 629.
- Refstie T., see Rye M., 875.
- Ridha M. T. & Lone K. P.: Preliminary studies of feminization and growth of *Oreochromis spluricus* (Günther) by oral administration of a 17 $\alpha$ -ethynyl-19-nortestosterone in sea water, 479.
- Ridha M. T., see Cruz E. M., 307; see also Gavine F. M., 483.
- Riley J. & Darmi M.: A survey of statistical use in aquacultural research, 95.
- Ringo E.: Hatchery-reared landlocked Arctic charr, *Salvelinus alpinus* (L.), from Lake Takvatn reared in fresh and sea water: effect of salinity on digestibility of protein and individual amino acids in a capelin roe diet and commercial feed, 221.
- Ringo E., Strøm E. & Tabachek J.-A.: Intestinal microflora of salmonids: a review, 773.
- Rollin X., see Zoccarato I., 361.
- Rosenlund G., see also; see Hemre G.-I., 399. Moksness E., 109.
- Ross D. J., see Henderson A. R., 659.
- Ross L. G. & Beveridge M. C. M.: Is there a better strategy necessary for development of native species for aquaculture 539.
- Rye M. & Refstie T.: Phenotypic and genetic parameters of body size traits in Atlantic salmon, *Salmo salar* L., 875.
- Sadiku S. O. E. & Jauncey K.: Digestibility, apparent amino acid availability and waste generation potential of soybean flour: poultry meat meal blend based diets for tilapia, *Oreochromis niloticus* (L.), fingerlings, 651.
- Samonte G. P. B., see Siar S. V., 459.
- Sandnes K., see Albrektsen S., 331; see also Hemre G.-I., 149.
- Schreck C. B., see Olla B. L., 393.
- Secor D. H., Dean J. M., Sessions F. W. & Curtis T. A.: Early growth and survival of striped bass, *Morone saxatilis* (Walbaum), and its phenotypically similar hybrid (*M. saxatilis*  $\times$  *M. chrysops*) using an otolith marking method, 155.
- Servais E., see Dosdat A., 639.
- Sessions F. W., see Secor D. H., 155.
- Siar S. V., Samonte G. P. B. & Espada A. T.: Participation of women in oyster and mussel farming in Western Visayas, Philippines, 459.
- Smith M. R., see Marsden M. W., 527.
- Smoker W. W., Crandell P. A. & Matsuoaka M.: Second polar body retention and gynogenesis induced by thermal shock in pink salmon, *Oncorhynchus gorbuscha* (Walbaum), 213.
- Sorgeloos P. & Beardmore J. A.: Correct taxonomic identification of *Artemia* species, 147.
- Spenser B. E. & Edwards D. B.: Observations on simulated depuration trials with Manila clam, *Tapes philippinarum* Adams and Reeve, 249.
- Strøm E., see Ringo E., 773.
- Struksnaes G., see Christiansen R., 311.
- Sukkel M., see Hariati A. M., 819.
- Summerfelt R. C., see Luzier J. M., 577.
- Tabachek J.-A., see Ringo E., 773.
- Takii K., Nakamura M., Tanaka Y. & Kumai H.: Diluted rotifer, *Brachionis plicatilis* (Müller), extract as culture medium stimulates hatching of red sea bream, *Pagrus major* (Temminck & Schlegel), 243.
- Talbot C., see Einen O., 701.
- Tanaka Y., see Takii K., 243.
- Teo L. H., see Guo F.-C., 265, 887.
- Teo L. H., see Guo F. C., 887.
- Tetu N., see Dosdat A., 639.
- Thompson D., see Howell B. R., 135.
- Tidwell J. H., see Webster C. D., 299.
- Torrissen O. J., see Christiansen R., 311; see also Hemre G.-I., 149.
- Uglem I. & Krogdahl A.: Tag retention and survival of

- juvenile lobsters, *Homarus gammarus* (L.), marked with coded wire tags, 837.
- Uglow R. E., see Buttle L. G., 895.
- Ulgenes Y., see Eikebrokk B., 589.
- Vabeno A., see Olli J. J., 161.
- van Dam A. A. & Pauly D.: Simulation of the effects of oxygen on food consumption and growth of Nile tilapia, *Oreochromis niloticus* (L.), 427.
- van Dam A. A. & Penning De Vries E. W. T.: Parameterization and calibration of a model to stimulate effects of feeding level and feed composition on growth of *Oreochromis niloticus* (L.), 415.
- van der Meer M. B., Machiels M. A. M. & Verdegem M. C. J.: The effect of dietary protein level on growth, protein utilization and body composition of *Colossoma macropomum* (Cuvier), 901.
- Van Muiswinkel W. B., see Wiegerjes G. E., 797.
- Verdegem M. C. J., see van der Meer M. B., 901.
- Verdegem M. C. J., see Hariati A. M., 819.
- Waagbø R., see Albrektsen S., 331; see also Hemre G.-I., 149, 399.
- Wahab M. A., Ahmed Z. F., Aminul Islam M., Haq M. S. & Rahmatullah S. M.: Effects of introduction of common carp, *Cyprinus carpio* (L.), on the pond ecology and growth of fish in polyculture, 619.
- Walker P., see Morrissey N. M., 71.
- Webster C. D., Goodgame-Tiu L. S. & Tidwell J. H.: Total replacement of fish meal by soy bean meal, with various percentages of supplemental L-methionine, in diets for blue catfish, *Ictalurus furcatus* (Leseur), 299.
- Weismann T., see Lahnsteiner E., 801.
- Wiadnya D. G. R., see Hariati A. M., 819.
- Wickins J. E., Beard T. W. & Child A. R.: Maximizing lobster, *Homarus gammarus* (L.), egg and larval liability, 379.
- Wiegerjes G. E., Pilarczyk A. & Van Muiswinkel W. B.: Disease resistance and growth of two inbred carp, *Cyprinus carpio* L., lines and their hybrid in pond culture, 797.
- Yakupitiyage A., see Nuov S., 601.
- Yu N., see Qin J., 911.
- Zoccarato I., Gasco L., Leveroni Calvi S., Fortina R., Bianchini M. L. & Rollin X.: Effect of dietary avoparcin on performances and carcass composition in rainbow trout, *Oncorhynchus mykiss* (Walbaum), 361.





## Subject Index

- Abalone, South African, amino acids, 283.  
Alkylbenzene sulphonate detergent, toxicity, toothed carp, 755.  
Amino acids, South African abalone, 283.  
Ammonia efflux, photoperiod, African catfish, 895.  
Ammonium production, zeolitic product, rainbow trout, 859.  
Anaesthetics:  
  platyfish:  
    oxygen consumption, 887;  
    water parameters, 265.  
*Anarhichas lupus* L., see wolffish.  
*Anguilla anguilla* (L.), see European eel.  
Animal drug approvals, United States, 679.  
Antibacterials, leaching, fish feed, 549.  
*Aphyosemion gairdneri* (L.), see toothed carp.  
*Artemia* species, taxonomic identification, 147.  
Artificial reproduction, African catfish, 233.  
Avoparcin, rainbow trout, 361.  
  
Bass, striped, growth and survival, otolith marking method, 155.  
Bioavailability, phosphorus, fish farm effluents, 607.  
Bioeconomic analysis, integrated fish farming, China, 81.  
Bivalve, somatic secondary production, Mexico, 843.  
*Brachionus plicatilis* (Müller), see rotifer.  
  
Cage culture:  
  phosphorus loadings, rainbow trout, 483;  
  rainbow trout, phosphorus loadings, 483;  
  zooplankton structure, 515.  
Cameroon, pond farming, Nile tilapia, 722, 730, 738, 747, 754.  
Captivity, growth, wolffish, 195.  
Carbohydrates, gonadal development, cod, 399.  
Carbohydrate nutrition, Atlantic salmon, 149.  
Carp:  
  common:  
    disease resistance, pond culture, 797;  
    mixed feeding schedules, protein-based diets, 161;  
    polyculture, pond ecology, 619;  
    pond culture, disease resistance, 797;  
    pond ecology, polyculture, 619;  
    protein-based diets, mixed feeding schedules, 161;  
    spontaneous diploidization, 289.  
  toothed:  
    alkylbenzene sulphonate detergent, toxicity, 755;  
    toxicity, alkylbenzene sulphonate detergent, 755.  
Catfish:  
  African:  
    ammonia efflux, photoperiod, 895;  
    artificial reproduction, 233;  
    chemotherapeutics, toxicity, 441;  
    crop residues, diet, 351;  
    diet, crop residues, 351;  
    Malawi chambo, 103;  
    photoperiod, ammonia efflux, 895;  
    toxicity, chemotherapeutics, 441.  
  blue:  
    L-methionine, soybean meal, 299;  
    soybean meal, L-methionine, 299.  
  channel:  
    body composition, replacing fish meal, 141;  
    economic impact, feeding restrictions, 687;  
    feeding restrictions, economic impact, 687;  
    replacing fish meal, body composition, 141.  
  European:  
    heat shock, triploidy, 367;  
    triploidy, heat shock, 367.  
Chambo, Malawi, African catfish, 103.  
Charr:  
  Arctic:  
    digestion, salinity, 221;  
    fresh water, salmon lice, 791;  
    growth, yolk absorption, 759;  
    salinity, digestion, 221;  
    salmon lice, fresh water, 791;  
    smolt characteristics, 809;  
    yolk absorption, growth, 759.  
  brook:  
    growth, yolk absorption, 759;  
    yolk absorption, growth, 759.  
Chemicals, ecotoxicological risk, 629.  
Chemotherapeutics, toxicity, African catfish, 441.  
*Cherax tenuimanus* (Smith 1912), see freshwater crayfish.  
Chicken offal silage, fish meal, Nile tilapia, 855.  
China, integrated fish farming, bioeconomic analysis, 81.  
Clam, Manila, simulated depuration trials, 249.  
*Clarias gariepinus* (Burchell, 1922), see African catfish.  
Cod, gonadal development, carbohydrates, 399.  
Coded wire tag retention, lobsters, survival, 837.  
*Colossoma macropomum* (Cuvier), protein, 901.  
Colour segregation, growth, red tilapia, 765.  
Consent compliance, environmental impacts, freshwater fish farms, 557.  
Crayfish, freshwater:  
  detrital forage, pond culture, 117;  
  pond culture, detrital forage, 117;  
  predictive equations, semi-intensive grow-out, 71;  
  semi-intensive grow-out, predictive equations, 71.  
Crop residues, diet, African catfish, 351.  
Curimbatá, thermal limits, 447.  
*Cyprinus carpio* L., see common carp.  
  
Detrital forage, pond culture, freshwater crayfish, 117.  
Diet:  
  African catfish, crop residues, 351;  
  Atlantic salmon, vitamin B<sub>6</sub>, 331;

- crop residues, African catfish, 351;  
phosphorus concentrations, rainbow trout, 577;  
rainbow trout, phosphorus concentrations, 577;  
vitamin B<sub>6</sub>, Atlantic salmon, 331.
- Diets, digestibility coefficients, gilthead sea bream, 185.  
Digestibility coefficients, diets, gilthead sea bream, 185.  
Digestion, salinity, Arctic charr, 221.  
Diploid gynogenesis, sex-determining mechanism, Dover sole, 135.
- Disease resistance:  
Atlantic salmon, genetic variation, 129;  
common carp, disease resistance, 797;  
genetic variation, Atlantic salmon, 129;  
pond culture, common carp, 797.
- Disinfectants, wastewater discharge, 567.
- East Java, shrimp, 819.
- Economic impact, feeding restrictions, catfish, 687.  
Ecotoxicological risk, chemicals, 629.  
Eel, European, sexual dimorphism, 409.  
Effluent discharge, waste production, 589.  
Egg and larval viability, lobster, 379.  
Environmental impacts, consent compliance, freshwater fish farms, 557.  
Experimental culture, white steenbras, 323.
- Farming, freshwater prawn, 1.  
Fat digestibility, soybean, Atlantic salmon, 831.  
Feeding restrictions, economic impact, catfish, 687.  
Feminization, oestrogen, tilapia, 479.  
Field methods, stress assessment, 273.  
Fish farm effluents, phosphorus, bioavailability, 607.  
Fish farms, nutrient discharges, 701.  
Fish feed, antibacterials, leaching, 549.  
Fish meal, chicken offal silage, Nile tilapia, 855.  
Fish meal quality, wolffish, 109.  
Fish performance, water quality, polyculture ponds, 55.  
Flesh colour, Atlantic salmon, 311.  
Fresh water, salmon lice, Arctic charr, 791.
- Freshwater:  
fish farms,  
consent compliance, environmental impacts, 557;  
environmental impacts, consent compliance, 557.
- lakes:  
mass-balance models, nutrient status, 469;  
nutrient status, mass-balance models, 469;  
phosphorus loading, 527.
- Gadus morhua* L., see cod.
- Genetic variation, disease resistance, Atlantic salmon, 129.
- Gonadal development, carbohydrates, cod, 399.
- Growth:  
captivity, wolffish, 195;  
charr, yolk absorption, 759;  
colour segregation, red tilapia, 765;  
meal time, rainbow trout, 341;  
Nile tilapia, oxygen, 427;  
oxygen, Nile tilapia, 427;  
rainbow trout, meal time, 341;  
red tilapia, colour segregation, 765;  
wolffish, captivity, 195;  
yolk absorption, charr, 759.
- Growth and survival, striped bass, otolith marking method, 155.
- Growth simulation, Nile tilapia, rainbow trout, 415.
- Gynogenesis, second polar body retention, thermal shock, pink salmon, 213.
- Gynogenetic diploids, phenotypic variation, Nile tilapia, 205.
- Haliotis midae* L., see South African abalone.
- Heat shock:  
brown trout, reproducibility, 67;  
European catfish, triploidy, 367;  
reproducibility, brown trout, 67;  
triploidy, European catfish, 367.
- Heterotrophs and autotrophs, organic fertilizer, water quality, 911.
- Homarus gammarus* (L.), see lobster.
- Hydrostatic pressure, tetraploidy, brown trout, 229.
- Ictalurus furcatus* (Lesueur), see blue catfish.
- Integrated fish farming, China, bioeconomic analysis, 81.
- Integrated production system, nutrient flows, 601.
- Intestinal microflora, salmonids, 773.
- Larvae separation, *Macrobranchium rosenbergii* (De Man), 225.
- Leaching, antibacterials, fish feed, 549.
- Lepeophtheirus salmonis* Krøyer, see salmon lice.
- Lithognathus lithognathus* (Cuvier), see white steenbras.
- L-methionine, soybean meal, blue catfish, 299.
- Lobster:  
egg and larval viability, 379;  
coded wire tag retention, survival, 837;  
survival, coded wire tag retention, 837.
- Macadamia presscake, protein feedstuff, tilapia, 371.
- Macrobenthic infaunal communities, marine cage fish farming, 659.
- Macrobranchium rosenbergii* (De Man), larvae separation, 225.
- Marine cage fish farming, macrobenthic infaunal communities, 659.
- Mass-balance models, nutrient status, freshwater lochs, 469.
- Meal time, growth, rainbow trout, 341.
- Mexico:  
bivalve, somatic secondary production, 843;  
native species development, 539;  
somatic secondary production, bivalve, 843.
- Minimum requirement, vitamin E, Atlantic salmon, 175.
- Mixed feeding schedules, protein-based diets, common carp, 161.
- Morone saxatilis* (Walbaum), see striped bass.
- Native species development, Mexico, 539.
- Nitrogenous excretion, turbot, 639.
- Nursery growth, sex reversal, Nile tilapia, 293.
- Nutrient discharges, fish farms, 701.
- Nutrient flows, integrated production system, 601.
- Nutrient status, freshwater lochs, mass-balance models, 469.
- Oestrogen, feminization, tilapia, 479.
- Oncorhynchus gorbuscha* (Walbaum), see pink salmon.



- Oncorhynchus mykiss* (Walbaum), see rainbow trout.
- Oreochromis karongae* (Trewavas, 1941), see Malawi chambo.
- Oreochromis mossambicus* (Peters), see Mozambique tilapia.
- Oreochromis niloticus* (L.), see Nile tilapia.
- Oreochromis shiranus* (Boulenger, 1896), see Malawi chambo.
- Oreochromis spilurus* (Günther), see tilapia.
- Organic fertilizer, heterotrophs and autotrophs, water quality, 911.
- Otolith marking method, striped bass, growth and survival, 155.
- Oxygen, growth, Nile tilapia, 427.
- Oxygen consumption, anaesthetics, platyfish, 887.
- Oyster, pearl, spatfall, 497.
- Oyster and mussel farming, women, 459.
- Pagrus major* (Temminck & Schlegel), see red sea bream.
- Pancreas disease, Atlantic salmon, 861.
- Penaeus merguensis* (De Man), see shrimp.
- Penaeus monodon* (Fabricius), see shrimp.
- Phenotypic parameters, Atlantic salmon, 875.
- Phenotypic variation, gynogenetic diploids, Nile tilapia, 205.
- Phosphorus, bioavailability, fish farm effluents, 607.
- Phosphorus concentrations, diet, rainbow trout, 577.
- Phosphorus loading:
- cage culture, rainbow trout, 483;
  - freshwater lakes, 527;
  - rainbow trout, cage culture, 483.
- Photoperiod, ammonia efflux, African catfish, 895.
- Pinna rugosa* (Sowerby), see bivalve.
- Platyfish:
- anaesthetics:
    - oxygen consumption, 887;
    - water parameters, 265.
- Polyculture, pond ecology, carp, 619.
- Polyculture ponds, fish performance, water quality, 55.
- Pond culture:
- detrital forage, freshwater crayfish, 117;
  - disease resistance, pond culture, 797;
  - freshwater crayfish, detrital forage, 117;
  - pond culture, disease resistance, 797.
- Pond ecology, polyculture, carp, 619.
- Pond farming, Nile tilapia, Cameroon, 722, 730, 738, 747, 754.
- Prawn, freshwater, farming, 1.
- Predator evasion, stress, Pacific salmon, 393.
- Predictive equations, semi-intensive grow-out, freshwater crayfish, 1.
- Prochilodus scrofa* Steindachner, see curimatá.
- Protein, *Colossoma macropomum* (Cuvier), 901.
- Protein feedstuff, macadamia presscake, tilapia, 371.
- Protein source, soybean meal, Atlantic salmon, 167.
- Protein to energy ratio, Mozambique tilapia, 451.
- Protein-based diets, mixed feeding schedules, common carp, 161.
- Pteria sterna* (Gould), see pearl oyster.
- Reproducibility, heat shock, brown trout, 67.
- Rotifer, red sea bream, 243.
- Salinity, digestion, Arctic charr, 221.
- Salmo salar* L., see Atlantic and Pacific salmon.
- Salmo trutta* L., see brown trout.
- Salmon
- Atlantic:
    - carbohydrate nutrition, 149;
    - diet, vitamin B<sub>6</sub>;
    - fat digestibility, soybean, 831;
    - flesh colour, 311;
    - genetic variation, disease resistance, 129;
    - minimum requirement, vitamin E, 175;
    - pancreas disease, 861;
    - phenotypic parameters, 875;
    - protein source, soybean meal, 167;
    - soybean, fat digestibility, 831;
    - soybean meal, protein source, 167;
    - vitamin B<sub>6</sub>, diet, 331;
    - vitamin E, minimum requirement, 175.
  - Pacific:
    - predator evasion, stress, 393;
    - stress, predator evasion, 393.
  - pink:
    - gynogenesis, second polar body retention, thermal shock, 213;
    - second polar body retention, gynogenesis, thermal shock, 213;
    - thermal shock, gynogenesis, second polar body retention, 213.
- Salmon lice, Arctic charr, fresh water, 791.
- Salmonids:
- semen cryopreservation, 801;
  - intestinal microflora, 773.
- Salvelinus alpinus* (L.), see Arctic charr.
- Salvelinus fontinalis* (Mitchill), see brook charr.
- Scophthalmus maximus* (L.), see turbot.
- Sea bream:
- gilthead:
    - diets, digestibility coefficients, 185;
    - digestibility coefficients, diets, 185.
  - red:
    - rotifer, 243.
- Sea water, survival, tilapia, 307.
- Second polar body retention, gynogenesis, thermal shock, pink salmon, 213.
- Semen cryopreservation, salmonids, 801.
- Semi-intensive grow-out, predictive equations, freshwater crayfish, 1.
- Sex reversal, nursery growth, Nile tilapia, 293.
- Sex-determining mechanism, diploid gynogenesis, Dover sole, 135.
- Sexual dimorphism, European eel, 409.
- Shrimp, East Java, 819.
- Silurus glanis* L., see European catfish.
- Simulated depuration trials, Manila clam, 249.
- Smolt characteristics, Arctic charr, 809.
- Sole, Dover, diploid gynogenesis, sex-determining mechanism, 135.
- Solea solea* L., see Dover sole.
- Somatic secondary production, bivalve, Mexico, 843.
- Soybean:
- Atlantic salmon, fat digestibility, 831;
  - fat digestibility, Atlantic salmon, 831;
  - flour:
    - tilapia, 651.

- meal:  
Atlantic salmon, protein source, 167;  
blue catfish, L-methionine, 299;  
L-methionine, blue catfish, 299;  
protein source, Atlantic salmon, 167.
- Sparus auratus* L., see gilthead sea bream.
- Spatfall, pearl oyster, 497.
- Spontaneous diploidization, carp eggs, 289.
- Statistical use, 95.
- Steenbras, white, experimental culture, 323.
- Stress, predator evasion, Pacific salmon, 393.
- Stress assessment, field methods, 273.
- Survival:  
coded wire tag retention, lobsters, 837;  
lobsters, coded wire tag retention, 837;  
sea water, tilapia, 307.
- Tapes philippinarum* Adams & Reeve, see Manila clam.
- Taxonomic identification, *Artemia* species, 147.
- Tetraploidy, hydrostatic pressure, brown trout, 229.
- Thermal limits, curimbata, 447.
- Thermal shock, gynogenesis, second polar body retention, pink salmon, 213.
- Tilapia:  
feminization, oestrogen, 479;  
macadamia presscake, protein feedstuff, 371;  
oestrogen, feminization, 479;  
protein feedstuff, macadamia presscake, 371;  
sea water, survival, 307;  
soybean flour, 651;  
survival, sea water, 307.
- Tilapia:  
Mozambique:  
protein to energy ratio, 451.
- Nile:  
Cameroon, pond farming, 722, 730, 738, 747, 754;  
chicken offal silage, fish meal, 855;  
fish meal, chicken offal silage, 855;  
growth, oxygen, 427;  
growth simulation, rainbow trout, 415;  
gynogenetic diploids, phenotypic variation, 205;  
nursery growth, sex reversal, 293;  
oxygen, growth, 427;  
phenotypic variation, gynogenetic diploids, 205;  
pond farming, Cameroon, 722, 730, 738, 747, 754;  
rainbow trout, growth simulation, 415;  
sex reversal, nursery growth, 293.
- red:  
colour segregation, growth, 765;  
growth, colour segregation, 765.
- Toxicity:  
haemotherapeutics, African catfish, 441;  
alkylbenzine sulphonate detergent, toothed carp, 755;  
toothed carp, alkylbenzine sulphonate detergent, 755.
- Triploidy, heat shock, European catfish, 367.
- Trout:  
brown:  
heat shock, reproducibility, 67;  
reproducibility, heat shock, 67;  
hydrostatic pressure, tetraploidy, 229;  
tetraploidy, hydrostatic pressure, 229.
- rainbow:  
ammonium production, zeolitic product, 859;  
avoparcin, 361;  
cage culture, phosphorus loadings, 483;  
diet, phosphorus concentrations, 577;  
growth, meal time, 341;  
growth simulation, Nile tilapia, 415;  
meal time, growth, 341;  
Nile tilapia, growth simulation, 415;  
phosphorus concentrations, diet, 577;  
phosphorus loadings, cage culture, 483;  
zeolitic product, ammonium production 859.
- Turbot, nitrogenous excretion, 639.
- United States, animal drug approvals, 679.
- Vitamin B<sub>6</sub>, diet, Atlantic salmon, 331.
- Vitamin E, minimum requirement, Atlantic salmon, 175.
- Waste production, effluent discharge, 589.
- Wastewater discharge, disinfectants, 567.
- Water parameters, anaesthetics, platyfish, 265.
- Water quality:  
fish performance, polyculture ponds, 55;  
heterotrophs and autotrophs, organic fertilizer, 911;  
organic fertilizer, heterotrophs and autotrophs, 911;  
polyculture ponds, fish performance, 55.
- Wolffish:  
captivity, growth, 195;  
fish meal quality, 109;  
growth, captivity, 195.
- Women, oyster and mussel farming, 459.
- Xiphophorus maculatus* (Günther), see platyfish.
- Yolk absorption, growth, charr, 759.
- Zeolitic product, ammonium production, rainbow trout, 859.
- Zooplankton structure, cage culture, 515.

